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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/131,693 | 08/10/1998 | HOON-SOON CHOI | 1317.1043/MO | 8185 |

21171 7590 12/23/2003

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| EXAMINER |
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CHIEU, PO LIN

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| ART UNIT | PAPER NUMBER |
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2615

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DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/131,693

Applicant(s)

CHOI, HOON-SOON

Examiner

Polin Chieu

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15, 17-19, 22-24, 28-30, 34-44 and 46-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 39-42 and 44 is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 10-12, 14, 15, 17-19, 22-24, 28-30, 34-38, 43 and 46-48 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 8, 9 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments directed towards the declaration filed 8/27/03 have been considered. The previous argument towards the date of constructive reduction to practice has been withdrawn. However, the declaration is still considered to be ineffective to overcome the Chang et al and Seto et al references.
2. The declaration filed on 8/27/03 under 37 CFR 1.131 has been considered but is ineffective to overcome the Chang et al and Seto et al references.
3. The evidence submitted is insufficient to establish diligence from a date prior to the date of reduction to practice of the Chang et al and Seto et al references to either a constructive reduction to practice or an actual reduction to practice.

The declaration fails to show "reasonable diligence" (MPEP 2138.06). An applicant must account for the entire period during which diligence is required. "A 2-day period lacking activity has been held to be fatal..." (MPEP 2138.06). The declaration shows that on 3/15/97 a signed invention disclosure form was submitted; on 4/25/97 the disclosure form was forwarded to the Korean Patent firm of K.J. Lee Patent and Trademark Office; and on 8/30/97 a Korean Application was filed. The declaration fails to account for the entire period during which diligence is required with either affirmative acts or acceptable excuses. The declaration fails to account for the period between 3/15/97 thru 4/25/97 and the period between 4/25/97 thru 8/30/97. "...The record must set forth an explanation or excuse for the inactivity; the USPTO or courts will not speculate on possible explanations for delay or inactivity" [MPEP 715.07(a)]. Also note

that the attorney must show reasonable diligence, "Reasonable diligence is established if attorney worked reasonably hard on the application during the continuous critical period." [MPEP 2138.06].

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4, 11, 14, and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al (5,875,164) in view of Seto et al (6,021,102), Chang et al (6,119,262), and Hogan (5,699,434).

Regarding claims 1-4, 11, 14, and 37-38, Yamakawa et al discloses a phase locked loop (PLL) to receive the pulse stream, to generate a PLL clock (col. 12, lines 30-64); a frame/ID synchronization detector to latch the pulse stream according to the PLL clock to generate a symbol clock (a frame/ID synchronization detector generating a symbol clock must be present in the PLL circuit since it is able to generate different types of clocks according to the recording medium detected); a single demodulator (79, fig. 29); a ECC decoder (79); and a CD audio processor (81). However, Yamakawa et al does not disclose EFM and EFM+ demodulation; a external memory; error correction according to a predetermined code length and error correction range, wherein the values are different for DVD and CD modes; a descrambler; a syndrome generator; an

erasure constant generator; a modified syndrome calculator; a modified Euclidean algorithm; and a Chien search and error correction circuit.

Yamakawa et al is able to receive a DVD or a CD and generate a video and/or audio signal, wherein a demodulation process is performed (79). However, Yamakawa et al does not disclose the specific methods of demodulation performed. Seto et al teaches demodulation of a CD using EFM and demodulation of a DVD using EFM+ (col. 7, lines 52-59). Further, it would have been obvious to have an external memory for storing the demodulated data for use during the ECC decoding.

Chang et al teaches a predetermined code length $C1(32,28)$ and a error correction range $C2(38,24)$ (col. 8, lines 55-67); a syndrome generator (20); a erasure constant generator to receive an erasure flag to generate an erasure constant (fig. 1b); a modified syndrome calculator to receive the syndrome polynomial and the erasure constant to calculate a modified syndrome and generate a Forney syndrome polynomial (col. 5, lines 5-10); a modified Euclidean algorithm to process the Forney syndrome polynomial and the erasure polynomial based on a modified Euclidean algorithm, to generate an errata locator polynomial and an errata evaluator polynomial (col. 5-6); and a Chien search and error correction circuit to correct errors of the demodulated data stored in the memory according to the errata locator polynomial and the errata evaluator polynomial (24).

Hogan teaches a descrambler to descramble data in the DVD mode (col. 8, lines 23-67).

It would have been highly desirable to demodulate using EFM for a CD mode and EFM+ in a DVD mode since they are the common techniques used for the respective mediums. It would have been highly desirable to have an external memory so that the ECC decoding and demodulator can use the memory for processing. Since Yamakawa et al does not disclose a specific method of error correction, it would have been highly desirable to use any known method of error correction. It would have been highly desirable to have a descrambler so that the device could descramble copy protected video.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to have a demodulator performing EFM and EFM+; a ECC correcting according to a predetermined code length and error correction range using a syndrome generator, erasure constant generator, a modified syndrome calculator, a modified Euclidean algorithm; and a Chien search and error correction circuit; a memory; and a descrambler in the device of Yamakawa et al.

6. Claims 7, 10, 12, 15, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al in view of Seto et al and Chang et al.

Regarding claims 7 and 10, Yamakawa et al discloses a PLL, a frame/ID, a single demodulator, and a ECC; Seto et al discloses demodulation for a DVD and demodulation for a CD; and Chang et al discloses error correction using a predetermined code length and error correction range, a syndrome generator, an erasure constant generator, a modified syndrome calculator, a modified Euclidean

algorithm, and a Chien search and error correction unit, as discussed previously.

Please refer to the art rejection of claim 1 for a detailed discussion of the limitations.

Regarding claims 12 and 15, Yamakawa et al discloses a PLL, a frame/ID, a single demodulator, and a ECC; Seto et al discloses demodulation for a DVD and demodulation for a CD; and Chang et al discloses error correction using a predetermined code length and error correction range, as discussed previously. Please refer to the art rejection of claim 1 for a detailed discussion of the limitations.

The limitations of claim 43 were discussed in the art rejection of claim 7 and 10 (note: the demodulator is not a single demodulator). Please refer to the art rejection of claims 7 and 10.

7. Claims 17, 22-24, 28-30, 34-36, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al in view of Chang et al.

Regarding claims 17, 22-23, 28-29, 34-35, and 46, Chang et al discloses a preprocessor generating a clock; a demodulator; a external memory; and error correcting data according to discrimination information using a preset error correction method, specifically a predetermined code length and correction range that are different for different mediums, as discussed previously. Please refer to the art rejection of claim 1.

Regarding claims 24, 30, 36, Yamakawa et al discloses a controller determining a type of disk through a signal read from the disk and outputting discrimination information (col. 11, line 42 – col. 13, line 3); a single pre-processor generating a clock

from a pulse stream read from one of the DVD and the CD and performing demodulation of the pulse stream according to the discrimination information and the generated clock (79, fig. 29); a single ECC decoder to error correct the first and second demodulated data (79); and a data processor and converter processing the data (81). However, Yamakawa et al does not disclose a single external memory to store the first and second demodulated data in a corresponding format according the disk type.

External memories used during various processing steps, demodulation or ECC, are well known in the art. Further, it is well known in the art that memories are often controlled by a memory controller.

It would have been highly desirable to have an external memory with a memory controller to be used during processing steps such as demodulation or ECC decoding.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to have an external memory with a memory controller in the device of Yamakawa et al.

8. Claims 18 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al in view of Hogan.

Regarding claims 18 and 47, Yamakawa et al discloses an audio processor; and Hogan discloses a descrambler, as discussed in the art rejection of claim 1. Please refer to the art rejection of claim 1.

9. Claims 19 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al in view of Seto et al.

Regarding claims 19 and 48, Yamakawa et al discloses a demodulator; an ECC; a PLL; and frame/ID; and Seto et al discloses demodulation in a DVD mode and demodulation in a CD mode; and an external memory was discussed in reference to Seto et al, as discussed previously. Please refer to the art rejection of claim 1.

Allowable Subject Matter

10. Claims 39-42 and 44 are allowed.
11. Claims 5-6, 8-9, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Polin Chieu whose telephone number is (703) 308-6070. The examiner can normally be reached on M-Th 8:00 AM-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew B. Christensen can be reached on (703) 308-9644. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

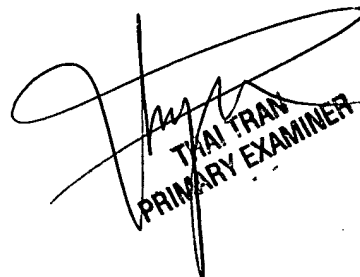
Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

PC
December 17, 2003



THAI TRAN
PRIMARY EXAMINER